Feb. 13, 1962 C. KAPLAN 3,020,796

KALEIDOSCOPIC DEVICE

Filed April 17, 1959

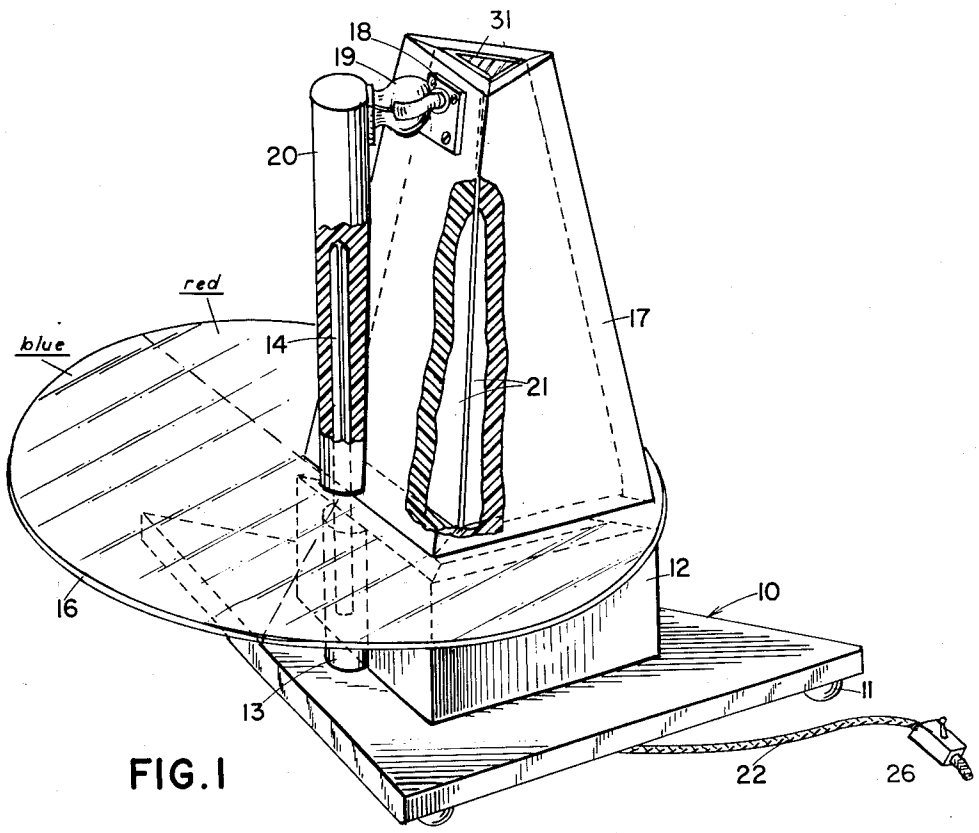


FIG. 1

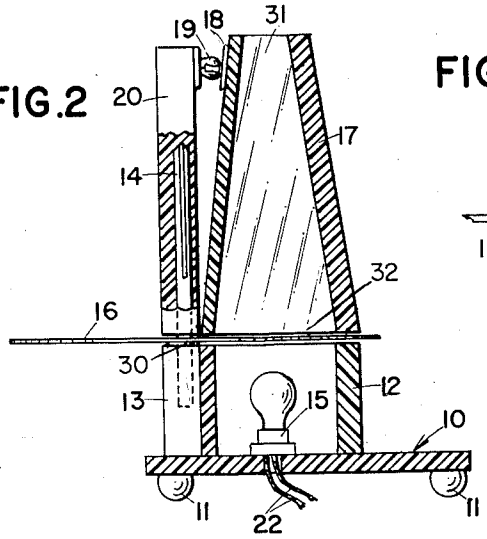


FIG. 2

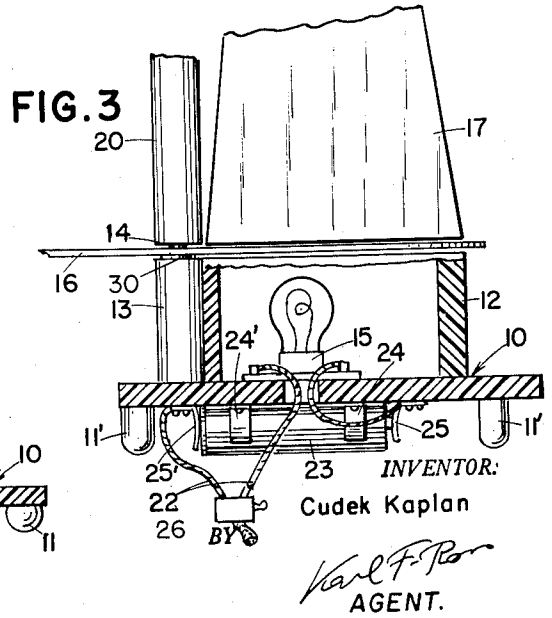


FIG. 3

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KALEIDOSCOPIC DEVICE

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My present invention relates to a kaleidoscopic device adapted to display a variety of patterns of different configurations and color combinations to an observer.

Kaleidoscopic devices are widely used as as toys designed to amuse youngsters by the diversity of the shapes adapted to be successively formed by a slight agitation or rotation of the viewing tube. This tube usually contains, in addition to the necessary internal reflecting surfaces, a filling of freely movable pebbles, crystals or the like which in their random groupings nevertheless give rise to regular polygonal images, a fact which rarely fails to amaze the unsophisticated observer and also serves to familiarize him with certain geometrical concepts.

After an initial period of enjoyment, however, the average user soon tires of the instrument as he discovers a recurrence of the same basic patterns. Having no control over the distribution of the image-forming particles, he finds himself moreover in a passive role which does not long sustain his interest.

It is an object of my invention to provide an improved kaleidoscopic device in which the user can actively control the formation of the patterns and wherein the number and variety of such patterns is virtually unlimited.

A more specific object of my invention is to provide a device of the character described which is useful not only as a toy but also as an aid to the designer of ornaments and industrial patterns.

A further object of my invention is the provision of a device for the production of three-dimensional patterns in contradistinction to the flat images obtained from conventional kaleidoscopes.

With the above and other objects in view, I provide a kaleidoscopic device in which a turntable preferably of translucent material (e.g. a ground-glass plate) is manually rotatable about a vertical stem which also serves as a support for a viewing tube eccentrically mounted above the turntable. Sufficient clearance exists between the lower end of the viewing tube and the turntable for the passage of small objects which, when placed on an exposed portion of the turntable, can be rotated into the field of view of the tube. Advantageously, the viewing tube is of generally frusto-pyramidal configuration and has its wider end adjacent the turntable to afford a large display area, at the same time causing its slanting mirrors to reflect the image of the deposited objects in a three-dimensional pattern to give an illusion of depth. A source of light may be provided directly underneath the viewing tube for translumination of the turntable and the objects positioned thereon.

The invention will be described in greater detail with reference to the accompanying drawing in which:

FIG. 1 is a perspective view of a kaleidoscopic device (parts broken away) according to my invention;

FIG. 2 is a sectional elevational view of the device shown in FIG. 1; and

FIG. 3 is a fragmentary elevational view, partly in section, of a modified form of this device.

The kaleidoscopic device shown in the drawing comprises a triangular base **10** supporting an upwardly open housing **12** of similar configuration. A tubular projection **13** on the housing supports a vertical stem **14** which passes through a central aperture in a turntable **16** and is longitudinally split in its upper portion to exert resilient pressure upon a plastic rod **20** having a bore to receive this stem. The bore of rod **20** is slightly shorter than

the portion of stem **14** projecting above turntable **16** so that this rod is spacedly held above the turntable, as is a viewing tube **17** which is mounted on the upper end of rod **20** with freedom of limited relative adjustment. In the specific embodiment illustrated, the tube **17** carries near its top a mounting plate **18** with a ball received in a pair of jaws **19** on rod **20** to form a universal joint.

The viewing tube **17** is of frusto-pyramidal configuration and has a triangular cross section similar to the outlines of housing **12** and base **10**. Tube **17** is lined internally with three slanting mirrors **21** which define a relatively narrow viewing aperture **31** at the top and a relatively wide field aperture **32** at the bottom. The turntable **16**, which may be a ground-glass disk, rests on a spacer **30** enabling its unhindered rotation above housing **12** within which there is disposed a lamp **15**. In the embodiment of FIGS. 1 and 2 the lamp **15** is connected to a cable **22** which passes between the short legs **11** of base **10** to a plug (not shown) connectable to the usual utility mains and which also includes a switch **26** for turning the lamp on and off.

In the modification of FIG. 3, the base **10** is supported on legs **11'** of greater length enabling a battery or dry cell **23** to be held underneath the base by spring clips **24, 24'**. Terminal springs **25, 25'** engage the poles of the battery and are connected to wires **22'** which complete the energizing circuit for lamp **15** through switch **26**.

In order to provide a variety of translumination effects, the disk **16** may be subdivided into several sectors of different colors as indicated in FIG. 1.

In operation, various objects such as tinsel, spangles, threads, shreds of paper and other articles, low enough to pass the clearance between tube **17** and turntable **16**, are placed on an exposed portion of the latter which thereupon is rotated until such objects enter the field of view of tube **17**. The turntable may be arrested in any position in which an interesting pattern is formed and may thereafter be rotated further to vary the pattern. Other variations with the same array of objects are possible by slightly moving the tube **17** in a radial direction about its pivot **18, 19**. If the objects are allowed to project from below tube **17**, they may also be adjusted by hand to change the pattern previously formed. I have found that a single thread, for example, may be used in this manner to provide a diversity of ornamental configurations and that two or more threads of different colors, if juxtaposed in various combinations, can furnish a large number of original patterns of interest to textile designers.

By raising the tube **17** and its mounting rod **20** on the supporting stem **14** I am also able to increase the clearance between the tube and the turntable **16** sufficiently to place larger objects (e.g. crystals) on the portion of the turntable operatively aligned with tube **17**.

My invention is, of course, not limited to the specific embodiments described and illustrated but may be realized in various modifications and adaptations without departing from the spirit and scope of the appended claims.

I claim:

1. A kaleidoscopic device comprising a substantially vertical stem, a turntable of translucent material rotatable about said stem, said stem projecting above said turntable, an internally reflecting viewing tube of frusto-pyramidal configuration and triangular cross-section substantially vertically supported on said stem and positioned with clearance above an eccentric portion of said turntable, said tube opening with its wider end onto said turntable, a base for said stem underneath said turntable, a housing on said base open toward said turntable, and an electric

lamp within said housing substantially in line with the tube axis.

2. A kaleidoscopic device comprising a substantially vertical stem, a turntable of translucent material rotatable about said stem, said stem projecting above said turntable, an internally reflecting viewing tube of frusto-pyramidal configuration and polygonal cross-section substantially vertically supported on said stem and positioned with clearance above an eccentric portion of said turntable, said tube opening with its wider end onto said turntable, a base for said stem underneath said turntable, a housing on said base open toward said turntable, and a source of light within said housing substantially in line with the tube axis.

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